Pearce, Jennifer

From: Jones, Laurie
Sent: Wednesday, January 20, 2016 5:32 PM
To: Pearce, Jennifer
Subject: FW: 7-1-2015@ arrowhead
Attachments: IMG_0250.MOV; ATT00001.txt

-----Original Message-----
From: Adam Johnston [mailto:aracoordinator@gmail.com]
Sent: Monday, June 01, 2015 3:54 PM
To: Jones, Laurie <JONES.LAURIE@EPA.GOV>
Subject: 7-1-2015@ arrowhead

Please see video! Let me know if you can not view it

Pearce, Jennifer

From: Jones, Laurie
Sent: Wednesday, January 20, 2016 5:33 PM
To: Pearce, Jennifer
Subject: FW: 7-1-2015@ arrowhead

-----Original Message-----
From: Jones, Laurie
Sent: Monday, June 01, 2015 4:19 PM
To: Adam Johnston <aracoordinator@gmail.com>
Subject: RE: 7-1-2015@ arrowhead

Yes, I can view it, thanks!

Laurie Jones
Environmental Engineer
Municipal and Industrial NPDES Enforcement Section Clean Water Enforcement Branch Region 4 EPA
phone: (404) 562-9201

-----Original Message-----
From: Adam Johnston [mailto:aracoordinator@gmail.com]
Sent: Monday, June 01, 2015 3:54 PM
To: Jones, Laurie
Subject: 7-1-2015@ arrowhead

Please see video! Let me know if you can not view it

Pearce, Jennifer

From: Jones, Laurie
Sent: Wednesday, January 20, 2016 5:33 PM
To: Pearce, Jennifer
Subject: FW: Arrowhead landfill discharges continue
Attachments: 11-11@Arrowhead-1.jpg; 11-11@Arrowhead-2.jpg; 11-11@Arrowhead-3.jpg; 11-11 @Arrowhead-4.jpg; 11-11@Arrowhead-5.jpg; 11-11@Arrowhead-6.jpg; 11-11 Arrowhead video.MOV

From: aracoordinator@gmail.com [mailto:aracoordinator@gmail.com] **On Behalf Of** Adam Johnston
Sent: Friday, November 13, 2015 2:01 PM
To: Jones, Laurie <JONES.LAURIE@EPA.GOV>
Cc: mitchell reid <mreid@alabamarivers.org>
Subject: Arrowhead landfill discharges continue

Dear Laurie,

Residents have alerted us to another continuous run-off at Arrowhead Landfill at the same place and location as earlier this yr where it ran for almost 30 days straight.

ADEM has been called multiple times and is actually sending an inspector there today.

Here are some pictures and video to add to the complaint.

Please let me know what comes of the inspector's report.

--
Adam Johnston

Alabama Rivers Alliance
Alliance Coordinator
www.alabamarivers.org

2014 6th Ave North, Suite 200
Birmingham, Al 35203
205.322.6395

Pearce, Jennifer

From: Jones, Laurie
Sent: Wednesday, January 20, 2016 5:33 PM
To: Pearce, Jennifer
Subject: FW: 7-1-2015@ arrowhead

From: Jones, Laurie
Sent: Friday, August 07, 2015 1:58 PM
To: Adam Johnston <ajohnston@alabamarivers.org>
Cc: Olone, Dan <Olone.Dan@epa.gov>; Guzman, Humberto <Guzman.Humberto@epa.gov>
Subject: RE: 7-1-2015@ arrowhead

Hi Mr. Johnston,

Yes, did you get my voicemail from last week? The chief of the stormwater group here has an update for you, please contact Dan Olone at 404-562-9434. Thanks!

Laurie Jones
Environmental Engineer
Municipal and Industrial NPDES Enforcement Section
Clean Water Enforcement Branch
Region 4 EPA
phone: (404) 562-9201

From: aracoordinator@gmail.com [mailto:aracoordinator@gmail.com] **On Behalf Of** Adam Johnston
Sent: Friday, August 07, 2015 1:16 PM
To: Jones, Laurie
Subject: Re: 7-1-2015@ arrowhead

Hey,

Any follow-up about the landfill?

On Mon, Jun 1, 2015 at 3:19 PM, Jones, Laurie <JONES.LAURIE@epa.gov> wrote:

Yes, I can view it, thanks!

Laurie Jones
Environmental Engineer
Municipal and Industrial NPDES Enforcement Section
Clean Water Enforcement Branch
Region 4 EPA
phone: (404) 562-9201

-----Original Message-----
From: Adam Johnston [mailto:aracoordinator@gmail.com]
Sent: Monday, June 01, 2015 3:54 PM
To: Jones, Laurie
Subject: 7-1-2015@ arrowhead

Please see video! Let me know if you can not view it

--
Adam Johnston

Alabama Rivers Alliance
Alliance Coordinator
www.alabamarivers.org

2014 6th Ave North, Suite 200
Birmingham, Al 35203
205.322.6395

Pearce, Jennifer

From: Jones, Laurie
Sent: Wednesday, January 20, 2016 5:33 PM
To: Pearce, Jennifer
Subject: FW: From 4/20/2015
Attachments: photo 1.JPG; ATT00001.txt; photo 2.JPG; ATT00002.txt; photo 3.JPG; ATT00003.txt; photo 4.JPG; ATT00004.txt; photo 5.JPG; ATT00005.txt

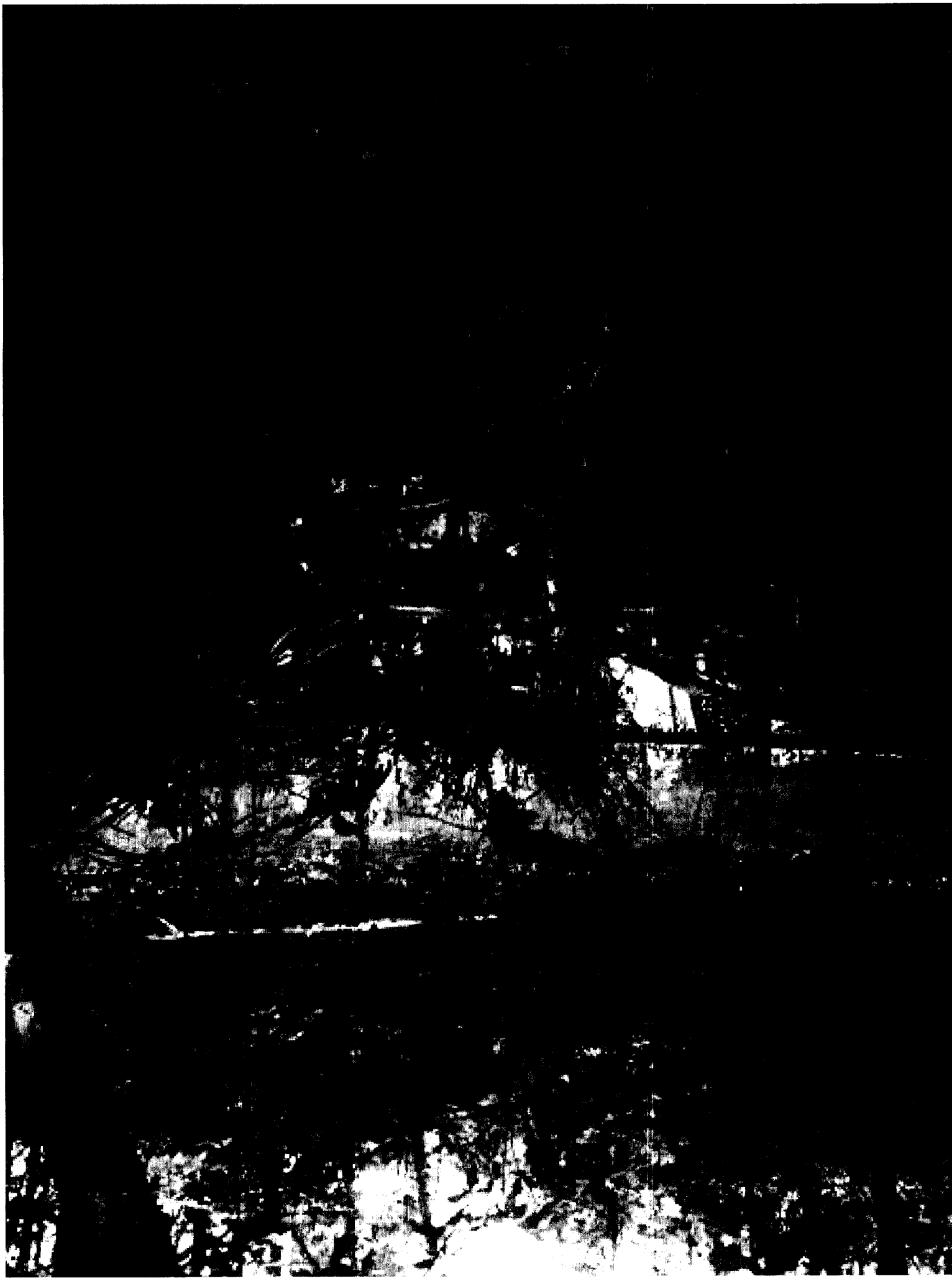
-----Original Message-----
From: Jones, Laurie
Sent: Wednesday, April 22, 2015 1:37 PM
To: aracoordinator@gmail.com
Cc: Guzman, Humberto <Guzman.Humberto@epa.gov>
Subject: FW: From 4/20/2015

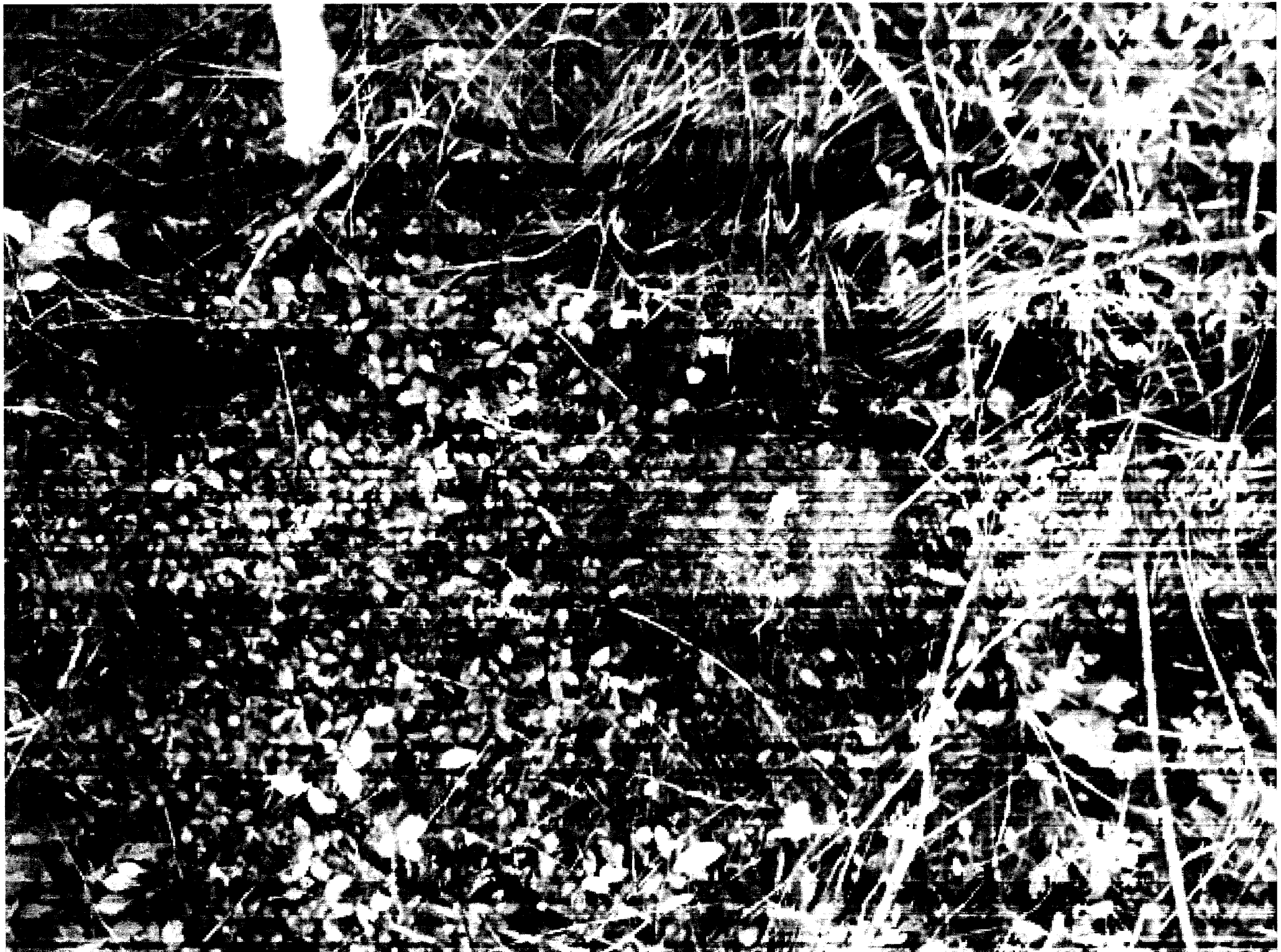
Thank you for sending these pictures Mr. Johnston. Humberto Guzman, the region's complaint coordinator was out on the day we spoke but has been briefed on the situation and complaints on this issue and will be following up with you. Thank you again for alerting EPA and ADEM to this issue.

Laurie Jones
Environmental Engineer
Municipal and Industrial NPDES Enforcement Section Clean Water Enforcement Branch Region 4 EPA
phone: (404) 562-9201

-----Original Message-----
From: Adam Johnston [mailto:aracoordinator@gmail.com]
Sent: Wednesday, April 22, 2015 1:23 PM
To: Jones, Laurie
Subject: From 4/20/2015

At same place with pool being formed from run-off and water on Arrowhead and running off into several seeps that leave...





Pearce, Jennifer

From: Jones, Laurie
Sent: Wednesday, January 20, 2016 5:33 PM
To: Pearce, Jennifer
Subject: FW: Arrowhead landfill discharges continue

From: Jones, Laurie
Sent: Friday, November 13, 2015 3:42 PM
To: Adam Johnston <ajohnston@alabamarivers.org>; mitchell reid <mreid@alabamarivers.org>
Cc: Guzman, Humberto <Guzman.Humberto@epa.gov>; Olone, Dan <Olone.Dan@epa.gov>
Subject: RE: Arrowhead landfill discharges continue

Hi Adam,

Thank you for this information which I am forwarding to EPA's complaint coordinator for follow-up with ADEM and with you.

Sincerely,
Laurie Jones
Environmental Engineer
Municipal and Industrial NPDES Enforcement Section
Clean Water Enforcement Branch
Region 4 EPA
phone: (404) 562-9201

From: aracoordinator@gmail.com [mailto:aracoordinator@gmail.com] **On Behalf Of** Adam Johnston
Sent: Friday, November 13, 2015 2:01 PM
To: Jones, Laurie <JONES.LAURIE@EPA.GOV>
Cc: mitchell reid <mreid@alabamarivers.org>
Subject: Arrowhead landfill discharges continue

Dear Laurie,

Residents have alerted us to another continuous run-off at Arrowhead Landfill at the same place and location as earlier this yr where it ran for almost 30 days straight.

ADEM has been called multiple times and is actually sending an inspector there today.

Here are some pictures and video to add to the complaint.

Please let me know what comes of the inspector's report.

--

Adam Johnston

Alabama Rivers Alliance
Alliance Coordinator
www.alabamarivers.org

2014 6th Ave North, Suite 200
Birmingham, Al 35203
205.322.6395

Pearce, Jennifer

From: Jones, Laurie
Sent: Wednesday, January 20, 2016 5:33 PM
To: Pearce, Jennifer
Subject: FW: Arrowhead Landfill - ALG160167
Attachments: Moseley - Compliance Evaluation Inspection.pdf

From: Jones, Laurie
Sent: Thursday, August 27, 2015 11:19 AM
To: Olone, Dan <Olone.Dan@epa.gov>; Dromgoole, Ahmad <Dromgoole.Ahmad@epa.gov>; Guzman, Humberto <Guzman.Humberto@epa.gov>
Subject: Fw: Arrowhead Landfill - ALG160167

Fyi

From: Warren, Lee <DLW@adem.state.al.us>
Sent: Thursday, August 27, 2015 10:40:21 AM
To: Jones, Laurie
Subject: Arrowhead Landfill - ALG160167

Laurie,

Please see the requested photographic update regarding the Arrowhead Landfill.

If we need to discuss, please feel free to call.

Thanks,

Lee

Lee Warren
Chief, Industrial General Permit Section
Industrial / Municipal Branch
Water Division
Alabama Department of Environmental Management
1400 Coliseum Boulevard
Montgomery, AL 36110
dlw@adem.state.al.us
(334) 271-7845

ADEM

Did you know you can submit your DMRs online using our newly enhanced E2 DMR Reporting System? To sign up and learn more, please visit the Department's E2 Reporting System webpage here.

H. Lowry Tribble, Jr., P.E.
William F. Hodges, P.E.
W. Michael Stubbs, P.E.
R. Brant Lane, P.E.
Clint L. Courson, CHMM
K. Matthew Cheek, P.E.
Daniel E. Cheek, P.E.
Kevin G. Berry, P.E.

HHNT
Hodges, Harbin, Newberry & Tribble, Inc.
Consulting Engineers

Nathan D. Dunn, P.E.
Ryan S. Willoughby, P.E.
William A. Granich, P.E.
Robert D. Heller, CHMM
Eric P. Jackson, P.E.
David E. Battson, P.E.
Ryan S. Peters, P.E.
William M. Reese, P.E.

August 19, 2015

Ms. Dodi Moseley
Industrial General Permit Section, Southwest
Industrial/ Municipal Branch
Water Division
1400 Coliseum Boulevard
Montgomery, AL 36110

RE: Arrowhead Landfill
Compliance Evaluation Inspection
General NPDES Permit No. ALG160167
HHNT Project No. 3006-029-13

Dear Ms. Moseley,

As requested in Ms. Lee Warren's letter dated May 22, 2015, please find attached photographic documentation of the vegetation that has been established in the disturbed areas noted during the facility inspection on April 17, 2015. This vegetation will continue to be maintained and inspected regularly by landfill personnel. Additionally, these photographs document that the concrete pipes that were previously stored near the leachate tank have been removed from the property as discussed on July 16, 2015.

Should you have any questions, please call.

Sincerely,

HODGES, HARBIN, NEWBERRY & TRIBBLE, INC.

Clint L. Courson, CHMM
Environmental Scientist

CLC/tw

Enclosure

cc: Lee Warren (w/ enclosure)
Evan Roberts (w/ enclosure)
Ernest Kaufmann (w/ enclosure)
Oscar Allen (w/ enclosure)
Thad Owings (w/ enclosure)
James Ashburn (w/ enclosure)
Michelle Coleman (w/ enclosure)

PHOTO 1: Area adjacent to leachate tank

PHOTO 2: Area northwest of scalehouse/ office

Project No: 3006-029-13

Date: August 19, 2015

Figure 1 of 1

Arrowhead Landfill

Photographic Documentation of Established Vegetation in Disturbed Areas and Removal of Concrete Pipes

HHNT

HODGES, HARBIN, NEWBERRY & TRIBBLE, INC.

Consulting Engineers

Pearce, Jennifer

From: Jones, Laurie
Sent: Wednesday, January 20, 2016 5:33 PM
To: Pearce, Jennifer
Subject: FW: Continued run-off at Arrowhead

From: Jones, Laurie
Sent: Tuesday, December 01, 2015 4:17 PM
To: Adam Johnston <ajohnston@alabamarivers.org>
Subject: RE: Continued run-off at Arrowhead

Hi Adam,

Thank you for your email and this new information. Humberto Guzman has been the lead in R4 on handling the issues surrounding this site and I have forwarded your email and questions to him. Please let me know if you don't hear back from him or need assistance in coordinating with him, thanks.

Laurie Jones
Environmental Engineer
Municipal and Industrial NPDES Enforcement Section
Clean Water Enforcement Branch
Region 4 EPA
phone: (404) 562-9201

From: aracoordinator@gmail.com [mailto:aracoordinator@gmail.com] **On Behalf Of** Adam Johnston
Sent: Tuesday, December 01, 2015 3:56 PM
To: Jones, Laurie <JONES.LAURIE@EPA.GOV>
Cc: mitchell reid <mreid@alabamarivers.org>
Subject: Continued run-off at Arrowhead

Hey Laurie, Here's more updates on the unpermitted discharge leaving Arrowhead

11/9: Visit, observance by Adam Johnston
11/10: Visit, observance, documentation by Adam and Rhiannon Fionn
11/11: Visit, observance, documentation by Adam and Esther Calhoun
11/12: Esther Calhoun calls and makes complaint on Arrowhead Landfill, ADEM complaint # 7k-002wd5e88
11/13: ADEM Inspection by Evan Roberts, Adam makes on-line complaint in response to ADEM giving him Esther's #, ADEM complaint # 6F-008BR4C12

Residents report runoff to ADEM and Al Rivers Alliance on Nov 18, 19 & 20. Residents report discharge continuing even through Thanksgiving week still discharging yesterday (11/30) and today (12/1).

ABOUT the 11/18 photos from Will Gipson:

- Gipson calls ADEM Thurs 11/19 & Fri 11/20 to report run-off, but he is sent to answering machine everytime
- Mon 11/23 ADEM calls him, Tues 11/24 landfill and ADEM call him, say "they're trying fix the run-off, he asks for complaint #"
- ADEM never gives him a complaint #
- Landfill sent private crew to work on run-off 11/24

QUESTIONS:

What's the result of the recent Inspector's report?

Why is the landfill continuing to have unpermitted discharges and ADEM not issuing any permit violations?

Why would ADEM not issue the residents another complaint # (after the latest inspection)?

Are you able to visit the site yourself?

--

Adam Johnston

Alabama Rivers Alliance
Alliance Coordinator
www.alabamarivers.org

2014 6th Ave North, Suite 200
Birmingham, Al 35203
205.322.6395

Pearce, Jennifer

From: Jones, Laurie
Sent: Wednesday, January 20, 2016 5:34 PM
To: Pearce, Jennifer
Subject: arrowhead letter: response to controlled correspondance
Attachments: AX-14-000-2872 Blk Belt Citizens Fight Health Justice 4-9-14.pdf

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

APR - 9 2014

Mrs. Esther Calhoun
Black Belt Citizens Fighting for Health and Justice
P.O. Box 523
Uniontown, Alabama 36786

Dear Mrs. Calhoun:

Thank you for your letters dated December 10, 2013, to Administrator Gina McCarthy, and January 8 and 10, 2014, to former Acting Regional Administrator A. Stanley Meiburg of the U.S. Environmental Protection Agency, outlining various concerns about the disposal of coal ash at the Arrowhead Landfill in Uniontown, Alabama, as well as concerns about the effectiveness of the proposed upgrades to the Uniontown municipal wastewater treatment plant. Your letter to the Administrator has been forwarded to the EPA's regional office in Atlanta, Georgia, for response. We recognize that members of the Black Belt Citizens Fighting for Health and Justice have also expressed concerns about the impacts of the Arrowhead Landfill in a Title VI civil rights complaint submitted to the Agency. The Title VI complaint is currently pending investigation by the EPA's Office of Civil Rights and will be responded to separately.

Arrowhead Landfill

You have requested the EPA intervene in the operations of the Arrowhead Landfill and stop further disposal of coal ash at the landfill. The EPA is no longer disposing of coal ash from the Tennessee Valley Authority (TVA) Superfund cleanup in Kingston, Tennessee, as the coal ash removal portion of that cleanup has been completed. However, at the time of the selection of the Arrowhead Landfill to receive coal ash from the TVA cleanup, an extensive analysis was done of the landfill's suitability to receive coal ash. At that time, the EPA determined that the landfill met or exceeded all of the technical requirements set forth by the EPA to ensure that such disposal was protective of human health and the environment. Specifically, the landfill conducted regular groundwater monitoring and was equipped with a compacted clay composite liner, a polyethylene geomembrane liner, a leachate collection system and a protective buffer surrounding the property.

In general, the permitting, enforcement and compliance of nonhazardous solid waste facilities, such as the Arrowhead Landfill, are within the authority of the state regulatory agencies. The EPA does not provide funding to state solid waste management programs and has a limited role in the oversight of the state's programs under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA). In order to obtain the EPA's approval of a state program, RCRA does require that the state demonstrate that it has adopted standards for municipal solid waste landfills that are at least as stringent as the federal regulations at 40 C.F.R. Part 258. Alabama made this demonstration and, as a result, the EPA approved Alabama's solid waste management program in March 1993.

Under the authority of its approved program, the Alabama Department of Environmental Management (ADEM) issued a Solid Waste Disposal Facility Permit to Perry County Associates LLC on July 6, 2006. Pursuant to this permit, the Arrowhead Landfill is permitted to accept coal ash for disposal; however, ADEM has advised the EPA that the facility is not currently accepting coal ash.

In addition, your letter raises concerns regarding the possible leaching of arsenic from the landfill based on sampling performed by a Samford University professor. The EPA has learned that ADEM Land Division conducted six compliance inspections during the time period that the Arrowhead Landfill accepted coal ash waste for disposal and conducted numerous other inspections since the landfill ceased receiving the coal ash waste and closed that portion of the landfill. The inspections evaluated compliance with the requirements of the facility's Solid Waste Permit, including an evaluation of possible deficiencies related to waste cover and inadequate storm water and leachate management.

ADEM also confirmed that no violations were observed during these inspections. If you would like to share the sampling results from the Samford University sampling event with ADEM for further evaluation, or if you have any other questions regarding coal ash at the Arrowhead Landfill or the facility's compliance with its Solid Waste Permit, please contact Eric Sanderson, Chief of ADEM's Solid Waste Branch, at (334) 271-7764. All of the solid waste inspection reports described in this letter are available for public viewing at http://edocs.adem.alabama.gov/eFile. These files can be accessed by clicking the box for "land" as the media area, entering "53-03" as the permit number and clicking the search button. The search results will be organized by date.

Further, you requested information about the status of the EPA's proposed regulation governing the management of coal ash. The EPA has been evaluating two regulatory options for the disposal of coal combustion residuals (CCR) and has received over 450,000 comments on these options. By court order, the EPA was required to provide a timeline for its finalization of the CCR rule by January 29, 2014. On January 29, the EPA agreed to issue a final CCR rule by December 19, 2014.

Uniontown Wastewater Treatment Facility

You also raised concerns regarding the proposed upgrades to the Uniontown Wastewater Treatment Facility (WWTF). Specifically, you raised concerns that the proposed spray field #2 will not provide for adequate treatment of the large quantities of wastewater generated by this facility. You also expressed concern that the mismanagement of sewage has led to illegal discharges of untreated and partially treated sewage into nearby creeks. Further, you requested that the EPA investigate the alleged misuse of public funds for the $4.8 million upgrade project, evaluate the effectiveness of the new spray field equipment and evaluate the hydrogeology report on spray field #2.

The EPA has delegated implementation of the Clean Water Act to ADEM. Under this authority, ADEM issued National Pollutant Discharge Elimination System (NPDES) Permit #AL0063657 to the City of Uniontown (the City) on November 21, 2008, for the WWTF, which authorizes the land application of treated wastewater. When the EPA spoke with ADEM regarding your concerns, we learned that ADEM has taken several enforcement actions against the City since 2008 regarding the City's failure to comply with its NPDES Permit. Specifically, ADEM issued a Consent Decree (CD) to the City on August 6, 2008, for unpermitted discharges from the wastewater collection and transmission system (WCTS) and WWTF lagoons. The CD required full compliance with the Permit by August 6, 2011, required the City to immediately cease unpermitted discharges from the WWTF and WCTS and required the City to complete the construction upgrades to the WWTF by November 10, 2011. On March 30, 2012, ADEM

filed a petition seeking a finding that the City was in contempt of court for noncompliance with the CD for failure to meet the provisions of the CD. A month later, on April 25, 2012, ADEM amended the petition to add unpermitted discharges from the existing spray field to the other violations. Also, on April 27, 2012, ADEM issued a cease and desist order to the City to cease all unpermitted discharges from the existing spray field. All of the documents described in this paragraph are available for public viewing at http://edocs.adem.alabama.gov/eFile, and can be accessed by clicking the box for "water" as the media area, entering "AL0063657" as the permit number and clicking the search button. The search results will be organized by date.

While the City submitted an engineering report, as required by the CD prescribing the actions necessary to come into compliance with its NPDES Permit, the City remained in noncompliance while it was trying to acquire the funds necessary to implement the proposed upgrades. The City recently acquired the funds needed to implement the prescribed actions. With these funds, the City is planning to upgrade the WWTP, the effect of which will also improve the quality of and reduce the level of pollutants in the water that is being applied on the spray field. The EPA has also learned that the City is making improvements at the current spray field to repair a dike around the southwestern edge to improve containment. ADEM has made it clear to the City that the City must comply with its NPDES Permit, which includes ceasing all unpermitted discharges from the current spray field. However, the City is responsible for investigating its options, selecting its course of action to achieve compliance, acquiring its own funding and ultimately achieving compliance with all of its NPDES Permit conditions. If the implementation of the actions prescribed in the City's engineering report does not result in full NPDES Permit compliance, ADEM and the EPA will discuss and evaluate options to bring the City into compliance. In addition, the City is in the process of constructing a second spray field to reduce the load on the currently overburdened spray field thus reducing pooling and runoff.

As stated in your letters, ADEM required the City to conduct a hydrogeological assessment for spray field #2 and submit a hydrogeology report. The operation of spray field #2, which has not yet begun, was permitted by ADEM on November 30, 2012, as a modification to the 2008 NPDES Permit. This modification prohibits runoff from the spray field; requires that the spray field be properly operated and maintained (to include operating within the limitations established in the hydrogeology report); and establishes a buffer zone and has requirements for groundwater monitoring as well as stream monitoring. With respect to your request that the EPA evaluate this hydrogeology report, ADEM is currently reviewing the report. In conjunction with its review of this report, ADEM has also requested that the City submit a hydrogeology report on the existing spray field. This will enable ADEM to evaluate the total load that can be handled by the soils across both spray fields. If ADEM's review finds there to be inadequate capacity, they have indicated they will instruct the City to conduct further review and assessment of alternative options.

In addition, the EPA Region 4 Safe Drinking Water Branch has reviewed your complaint to determine the City's compliance with the Safe Drinking Water Act. The technical report associated with spray field #2 indicates that the soils in the area were formed from the weathering of the underlying chalk and soft limestone and therefore have fairly high clay content, which results in low percolation rates. The low percolation rates caused the "ponding" at spray field #1. Based on this fact and the other information in the technical report, the potential for contamination of an underground source of drinking water is very low. However, according to the report attached to the complaint, up-gradient and down-gradient ground water monitoring wells have been installed and will serve as early detection in the highly unlikely event that the private water supply wells (believed to be greater than 80 feet deep) become impacted.

Residents in the area of spray field #2 have access to and could connect to the public water system. Note that the public water systems serving the area have water supply wells that are below the confining layer and several miles from the site.

We appreciate your desire to protect and preserve the environment and hope you find this information helpful. If we may be of further assistance, please contact Denise Tennessee, Director, Office of Environmental Justice and Sustainability at (404) 562-8460.

Sincerely,

Heather McTeer Toney
Regional Administrator

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

APR - 9 2014

Mr. Ellis B. Long
Black Belt Citizens Fighting for Health and Justice
P.O. Box 523
Uniontown, Alabama 36786

Dear Mr. Long:

Thank you for your letters dated December 10, 2013, to Administrator Gina McCarthy, and January 8 and 10, 2014, to former Acting Regional Administrator A. Stanley Meiburg of the U.S. Environmental Protection Agency, outlining various concerns about the disposal of coal ash at the Arrowhead Landfill in Uniontown, Alabama, as well as concerns about the effectiveness of the proposed upgrades to the Uniontown municipal wastewater treatment plant. Your letter to the Administrator has been forwarded to the EPA's regional office in Atlanta, Georgia, for response. We recognize that members of the Black Belt Citizens Fighting for Health and Justice have also expressed concerns about the impacts of the Arrowhead Landfill in a Title VI civil rights complaint submitted to the Agency. The Title VI complaint is currently pending investigation by the EPA's Office of Civil Rights and will be responded to separately.

Arrowhead Landfill

You have requested the EPA intervene in the operations of the Arrowhead Landfill and stop further disposal of coal ash at the landfill. The EPA is no longer disposing of coal ash from the Tennessee Valley Authority (TVA) Superfund cleanup in Kingston, Tennessee, as the coal ash removal portion of that cleanup has been completed. However, at the time of the selection of the Arrowhead Landfill to receive coal ash from the TVA cleanup, an extensive analysis was done of the landfill's suitability to receive coal ash. At that time, the EPA determined that the landfill met or exceeded all of the technical requirements set forth by the EPA to ensure that such disposal was protective of human health and the environment. Specifically, the landfill conducted regular groundwater monitoring and was equipped with a compacted clay composite liner, a polyethylene geomembrane liner, a leachate collection system and a protective buffer surrounding the property.

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In addition, your letter raises concerns regarding the possible leaching of arsenic from the landfill based on sampling performed by a Samford University professor. The EPA has learned that ADEM Land Division conducted six compliance inspections during the time period that the Arrowhead Landfill accepted coal ash waste for disposal and conducted numerous other inspections since the landfill ceased receiving the coal ash waste and closed that portion of the landfill. The inspections evaluated compliance with the requirements of the facility's Solid Waste Permit, including an evaluation of possible deficiencies related to waste cover and inadequate storm water and leachate management.

ADEM also confirmed that no violations were observed during these inspections. If you would like to share the sampling results from the Samford University sampling event with ADEM for further evaluation, or if you have any other questions regarding coal ash at the Arrowhead Landfill or the facility's compliance with its Solid Waste Permit, please contact Eric Sanderson, Chief of ADEM's Solid Waste Branch, at (334) 271-7764. All of the solid waste inspection reports described in this letter are available for public viewing at http://edocs.adem.alabama.gov/eFile. These files can be accessed by clicking the box for "land" as the media area, entering "53-03" as the permit number and clicking the search button. The search results will be organized by date.

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We appreciate your desire to protect and preserve the environment and hope you find this information helpful. If we may be of further assistance, please contact Denise Tennessee, Director, Office of Environmental Justice and Sustainability at (404) 562-8460.

Sincerely,

Heather McTeer Toney
Regional Administrator

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

APR - 9 2014

Mr. Benjamin Eaton
Black Belt Citizens Fighting for Health and Justice
P.O. Box 523
Uniontown, Alabama 36786

Dear Mr. Eaton:

Thank you for your letters dated December 10, 2013, to Administrator Gina McCarthy, and January 8 and 10, 2014, to former Acting Regional Administrator A. Stanley Meiburg of the U.S. Environmental Protection Agency, outlining various concerns about the disposal of coal ash at the Arrowhead Landfill in Uniontown, Alabama, as well as concerns about the effectiveness of the proposed upgrades to the Uniontown municipal wastewater treatment plant. Your letter to the Administrator has been forwarded to the EPA's regional office in Atlanta, Georgia, for response. We recognize that members of the Black Belt Citizens Fighting for Health and Justice have also expressed concerns about the impacts of the Arrowhead Landfill in a Title VI civil rights complaint submitted to the Agency. The Title VI complaint is currently pending investigation by the EPA's Office of Civil Rights and will be responded to separately.

Arrowhead Landfill

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Under the authority of its approved program, the Alabama Department of Environmental Management (ADEM) issued a Solid Waste Disposal Facility Permit to Perry County Associates LLC on July 6, 2006. Pursuant to this permit, the Arrowhead Landfill is permitted to accept coal ash for disposal; however, ADEM has advised the EPA that the facility is not currently accepting coal ash.

In addition, your letter raises concerns regarding the possible leaching of arsenic from the landfill based on sampling performed by a Samford University professor. The EPA has learned that ADEM Land Division conducted six compliance inspections during the time period that the Arrowhead Landfill accepted coal ash waste for disposal and conducted numerous other inspections since the landfill ceased receiving the coal ash waste and closed that portion of the landfill. The inspections evaluated compliance with the requirements of the facility's Solid Waste Permit, including an evaluation of possible deficiencies related to waste cover and inadequate storm water and leachate management.

ADEM also confirmed that no violations were observed during these inspections. If you would like to share the sampling results from the Samford University sampling event with ADEM for further evaluation, or if you have any other questions regarding coal ash at the Arrowhead Landfill or the facility's compliance with its Solid Waste Permit, please contact Eric Sanderson, Chief of ADEM's Solid Waste Branch, at (334) 271-7764. All of the solid waste inspection reports described in this letter are available for public viewing at http://edocs.adem.alabama.gov/eFile. These files can be accessed by clicking the box for "land" as the media area, entering "53-03" as the permit number and clicking the search button. The search results will be organized by date.

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APR - 9 2014

Mrs. Mary Leila Schaeffer
Black Belt Citizens Fighting for Health and Justice
P.O. Box 523
Uniontown, Alabama 36786

Dear Mrs. Schaeffer:

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Sincerely,

Heather McTeer Toney
Regional Administrator

Walter

Black Belt Citizens

Fighting for Health and Justice

PO Box 523, Uniontown, AL 36786

January 8, 2014

Ms. Glenda Dean, Chief
Water Division
Alabama Department of Environmental Management
P. O. Box 301463
Montgomery, AL 36130-1463

Mr. Nivory Gordon, Area Director, Area 4
USDA Rural Development
321 Depot Street
Camden, AL 36726

✓ Mr. A. Stanley Meiberg, Acting Regional Director
Environmental Protection Agency, Region 4
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-3104

Mr. John H. Stevens, PE, Vice President
Sentell Engineering, Inc.
P. O. Box 1246
Tuscaloosa, AL 35403

'14 JAN 14 AM 10:32

Mr. John M. Gibbs, Attorney at Law
Gibbs and Sellers
108 North Walnut Street
Demopolis, AL 36732

Representative Terri A. Sewell
U.S. House of Representatives
1133 Longworth HOB
Washington, D.C. 20515

Ms. Carolyn Powell
Office of Rep. Terri A. Sewell
Federal Building
908 Alabama Avenue, Suite 112
Selma, AL 36701

Ladies and Gentlemen:

Black Belt Citizens Fighting for Health and Justice is addressing all of you jointly as each one of you has been a concerned and involved party in the decision-making process regarding the loans, grants, expenditures for, and intended results to be achieved by the proposed upgrades to Uniontown's wastewater treatment system.

Along with Uniontown's elected officials, each of you has some degree of responsibility for what has already taken place, as well as possible liability for inadequate planning and assessment, poor judgment, negligence, failure to follow proper procedures and protocols, concealment of pertinent data, and failure to comply with critical requirements for such projects.

Members of our group have been trying for many months to bring our issues and concerns to your attention. We have made innumerable phone calls; requested specific information about the project, the construction, and the budget; attended many city council meetings to bring issues to their attention; requested additional meetings and hearings with the engineering firm and the USDA; traveled several times to the AEMC and ADEM in Montgomery to plead for assistance and relief; and written previous letters to most of you. All this to no avail! Everywhere we have turned, we have found deaf ears and encountered a stubborn determination to proceed with this project in spite of clear evidence that the site of proposed Spray Field # 2 is doomed to fail.

The evidence we presented earlier has now been confirmed and ratified by the hydrogeologist's report completed in November, 2013. You can no longer evade, ignore, or deny the facts that we have been reiterating for months.

Attached please find our recent letter to Uniontown's Mayor Jamaal Hunter and the City Council. Also attached are excerpts from the hydrogeologist's report documenting "Severe Limitations" in using the site of Spray Field # 2 for land application of wastewater.

It is time to get your heads out of the sand and stop ignoring this extremely serious situation. All parties to this project need to acknowledge the problems with Spray Field # 2. All parties need to call an immediate halt to the work and STOP further wasteful spending on the construction of Spray Field # 2.

All parties need to work cooperatively with us to seek appropriate long-term solutions to our wastewater treatment challenges. Appropriate long-term solutions should be as much the goal for each of you as it is for us as Uniontown residents. Ultimately, we will be required to pay the tab for these upgrades and, unfortunately, someone will be left holding the bag for the costly mistakes that have been made on this project to date.

Please take swift and decisive action to stop construction on Spray Field # 2, as time is of the essence!

Very truly yours,
Black Belt Citizens Fighting for Health and Justice

Esther Calhoun
Esther Calhoun, President

Benjamin Eaton, Vice President

Ellis B. Long
Ellis B. Long, Secretary

Mary Schaeffer, Treasurer

Black Belt Citizens
Fighting for Health and Justice
PO Box 523, Uniontown, AL 36786

January 2, 2014

Re: Uniontown Spray Field #2

Honorable Mayor and City Council Members:

Concerned citizens of Uniontown want a quality product from the improvements included in the upgrades to our wastewater treatment plant. It is our love of community that has prompted us to spend the last several months pushing you to respond to questions and take corrective steps to solve a problem fifty (50) years in the making. Our wastewater treatment system has polluted nearby streams for years. It is our expectation that improvements costing $4.8 million dollars should remediate the problem for years to come.

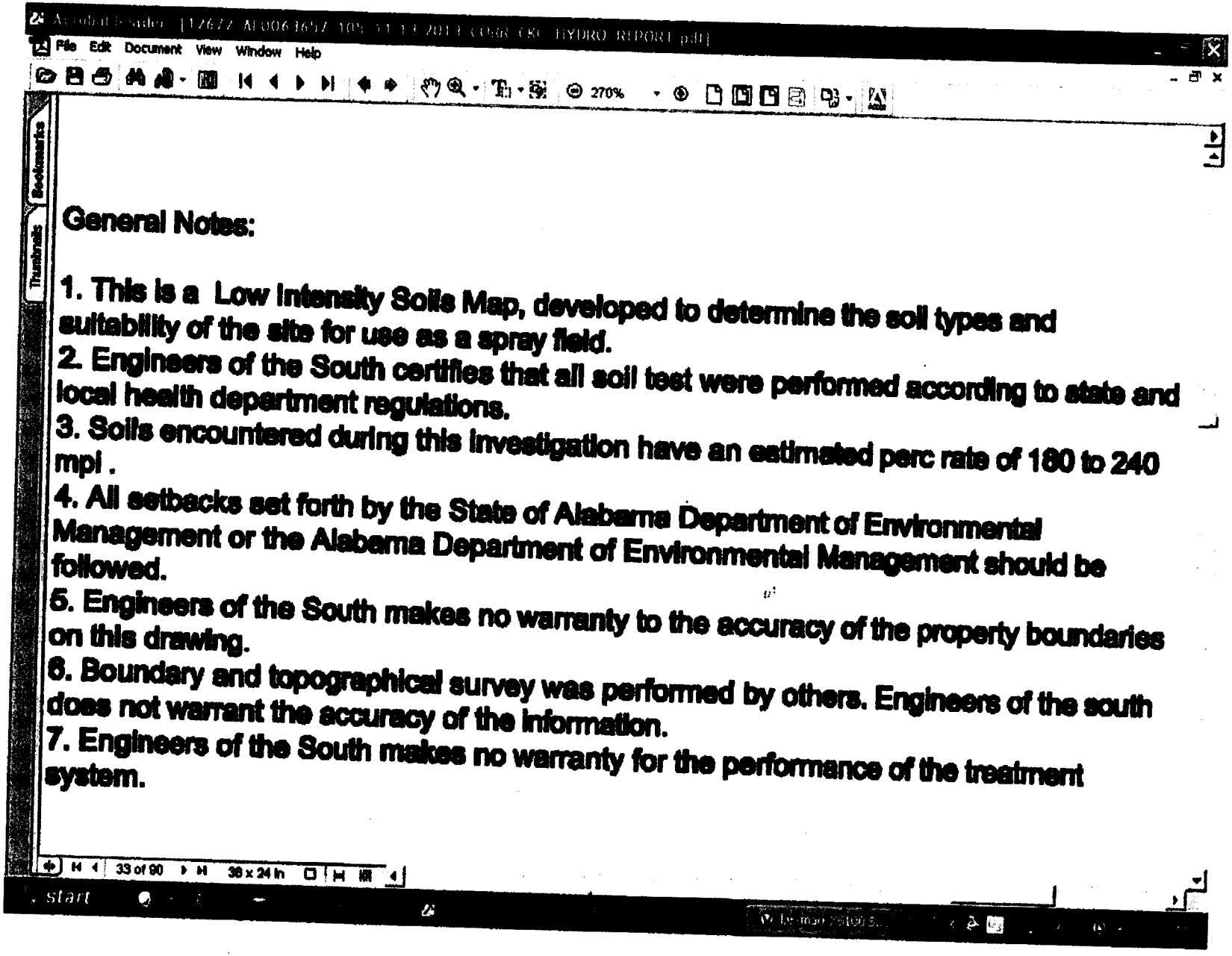
We feel that you have not listened to us. We have appealed to the Alabama Department of Environmental Management (ADEM), and their response to us has been very clear. They tell us that the ball is in your court. It is your job as our elected officials to address our concerns in an affirmative manner in writing. We have spent many hours, days and weeks investigating the details of the project. Data is attached that we believe documents our concerns. To that end we are available to meet and discuss any and all data that you may question or for which you need further clarification.

It is our conclusion, based on the hydrogeologist's report dated November 2013 and prepared for Sentell Engineering, Inc. by Cox Environmental & HydroGeologic, LLC, that the site chosen for Spray Field #2 IS NOT suitable.

We cite some of our concerns as follows:

Section 4.03 page 9 paragraph 3. What determines the number of "rest" days between uses to allow for proper percolation and re-aeration of the soil?

Section 5.02 page 10 last paragraph and section 5.09 page 15. Physical filtration and biological treatment of wastewater occurs in the uppermost 2-4 feet of soil. We are concerned that these soils will saturate very quickly and lose aeration. Our experience regarding actual soil saturation is inconsistent with the report's findings. During the period between just before Christmas and just after New Year's Day, Uniontown had several heavy rainfalls. Standing water and generally saturated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270%
Bookmarks
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General Notes:
1. This is a Low Intensity Soils Map, developed to determine the soil types and suitability of the site for use as a spray field.
2. Engineers of the South certifies that all soil test were performed according to state and local health department regulations.
3. Soils encountered during this investigation have an estimated perc rate of 180 to 240 mpi .
4. All setbacks set forth by the State of Alabama Department of Environmental Management or the Alabama Department of Environmental Management should be followed.
5. Engineers of the South makes no warranty to the accuracy of the property boundaries on this drawing.
6. Boundary and topographical survey was performed by others. Engineers of the south does not warrant the accuracy of the information.
7. Engineers of the South makes no warranty for the performance of the treatment system.
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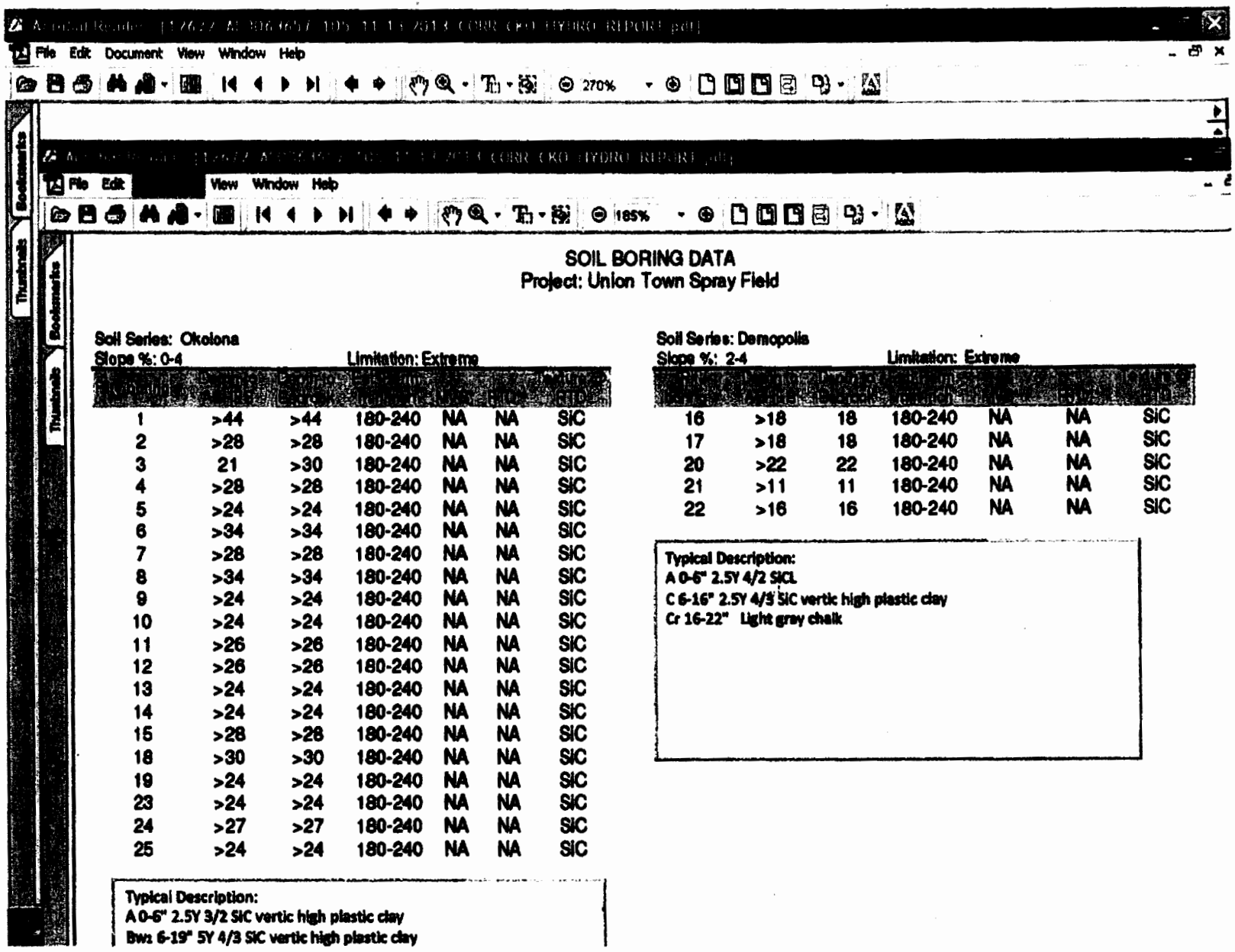


SOIL BORING DATA
Project: Union Town Spray Field

Soil Series: Okolona
Slope %: 0-4 **Limitation: Extreme**

1	>44	>44	180-240	NA	NA	SIC
2	>28	>28	180-240	NA	NA	SIC
3	21	>30	180-240	NA	NA	SIC
4	>28	>28	180-240	NA	NA	SIC
5	>24	>24	180-240	NA	NA	SIC
6	>34	>34	180-240	NA	NA	SIC
7	>28	>28	180-240	NA	NA	SIC
8	>34	>34	180-240	NA	NA	SIC
9	>24	>24	180-240	NA	NA	SIC
10	>24	>24	180-240	NA	NA	SIC
11	>26	>26	180-240	NA	NA	SIC
12	>26	>26	180-240	NA	NA	SIC
13	>24	>24	180-240	NA	NA	SIC
14	>24	>24	180-240	NA	NA	SIC
15	>28	>28	180-240	NA	NA	SIC
18	>30	>30	180-240	NA	NA	SIC
19	>24	>24	180-240	NA	NA	SIC
23	>24	>24	180-240	NA	NA	SIC
24	>27	>27	180-240	NA	NA	SIC
25	>24	>24	180-240	NA	NA	SIC

Typical Description:
A 0-6" 2.5Y 3/2 SIC vertic high plastic clay
Bw1 6-19" 5Y 4/3 SIC vertic high plastic clay

Soil Series: Demopolis
Slope %: 2-4 **Limitation: Extreme**

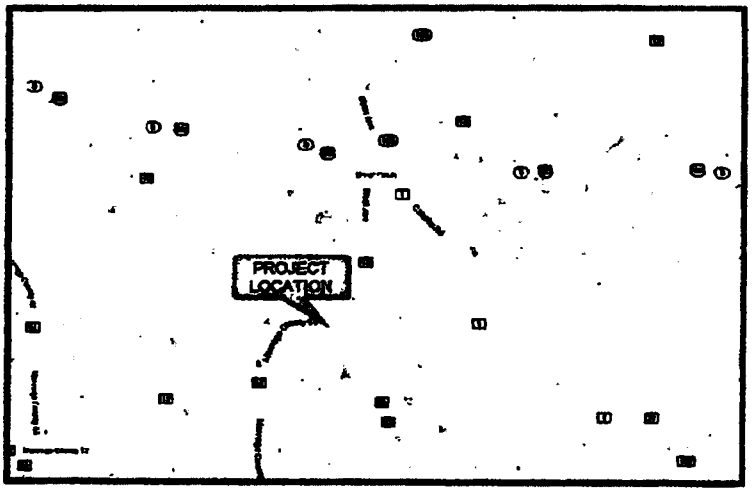
16	>18	18	180-240	NA	NA	SIC
17	>18	18	180-240	NA	NA	SIC
20	>22	22	180-240	NA	NA	SIC
21	>11	11	180-240	NA	NA	SIC
22	>16	16	180-240	NA	NA	SIC

Typical Description:
A 0-6" 2.5Y 4/2 SICL
C 6-16" 2.5Y 4/3 SIC vertic high plastic clay
Cr 16-22" Light grey chalk

CITY OF UNIONTOWN,
PERRY COUNTY, ALABAMA

PHASE I and II REPORT FOR SLOW RATE LAND TREATMENT

SPRAYFIELD SITE NO. 2



November 2013

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TABLE OF CONTENTS

PHASE I REPORT

PHASE II REPORT

ATTACHMENTS:

ATTACHMENT "A"
Figure 1: Preliminary Site Layout
Figure 2: SCS Soil Survey Map
Figure 3: USGS 7.5 Minute Series Quadrangle Map

ATTACHMENT "B"
Water Balance Calculations
Nitrogen Balance Calculations
Storage Volume Calculations

ATTACHMENT "C"
Low Intensity Soils Map
Soil Boring Data Log

ATTACHMENT "D"
Hydraulic Conductivity Tests (provided by Building and Earth Sciences)

ATTACHMENT "E"
Soil Analytical Lab Data (provided by LRS, Inc.)

ATTACHMENT "F"
Lagoon Effluent Water Quality Analysis (provided by TTL)

ATTACHMENT "G"
Ground Water Well Location Map

ATTACHMENT "H"
Phase 1 Hydrogeological Evaluation

PHASE I: Uniontown WWTP Site 2: Slow Rate Land Application

1.0 INTRODUCTION

The City of Uniontown is proposing a new land application site to supplement the existing land application site. The new facility will provide for treated effluent disposal for residents in the City of Uniontown. Sentell Engineering, Inc. will provide the design for the effluent disposal system. The proposed system is a slow rate land treatment process using spray irrigation to apply the secondary treated wastewater. The design will be based on the Alabama Department of Environmental guidelines (ADEM guidelines). In addition, *Process Design Manual for Land Treatment of Municipal Wastewater*, by the U.S. Environmental Protection Agency (EPA guidelines) has been used as a reference.

The treated effluent disposal system will be designed to prevent direct runoff and protect groundwater quality. The site is located within the Alabama River watershed. Surface runoff from the site discharges to Freetown Creek a tributary of Chilatchee Creek which in turn discharges to the Alabama River.

The existing wastewater treatment facility and proposed land application expansion produces effluent meeting secondary treatment standards. The treatment system is a three (3) cell, partially aerated lagoon. An upgrade to the lagoon system is currently underway. The treated effluent will be applied at conservative application rates to minimize any adverse impact on groundwater.

This combined Phase I and Phase II report for Slow Rate Land Treatment, Uniontown WWTP Site 2 is hereby submitted to ADEM for comment and approval.

The Owner has coordinated with and met on site with representatives of the ADEM to review the proposed second land application site.

2.0 PROJECT AND SITE DESCRIPTION

The site is located south of the city limits of the City of Uniontown in Perry County, Alabama. The site is comprised of 49 acres in the Northwest ¼ of Section 30, Township 17 North, Range 6 East within the USGS Uniontown West Quadrangle. Of the 49 acres, approximately 26.5 acres will be reserved for the slow rate land treatment site. The remaining area is located within property and/or drainage setbacks. A low intensity soils map with the setbacks delineated is included as Attachment "C".

The site is dissected by a drainage way running from north to south with an average elevation of 270 feet above sea level. The western side of the site is trending from the north to the south. The eastern side of the site is trending from the east to the west. Site elevations range from 259 feet to 280 feet. Drainage on the site is predominantly to the south.

Access to the site is from County Road 53. From Uniontown take West Avenue (County Road 53) towards the south; approximately 1.5 miles outside of the city limits, the road will fork to the west towards Marengo County. The site is located to the left just east of the Marengo County line. The site has been recently cleared of trees in preparation of the installation of the land application system.

2.01 EXISTING WASTEWATER TREATMENT FACILITY

The existing wastewater treatment facility is a three (3) cell, partially aerated lagoon system. Historically, the treatment system has had problems complying with discharge limits for $CBOD_5$, TKN – nitrogen, and fecal coliform. Other non-compliance events were associated with mechanical failures resulting in unpermitted discharges, and hydraulic overloading of the existing sprayfield. As a consequence, the City of Uniontown received a Consent Order from ADEM on August 12, 2008. In response, the City, with assistance from Santell Engineering, applied for and received a USDA grant and low interest loan in order to provide needed improvements to the system.

Several improvements have been proposed for the existing lagoon system and are currently under construction. The first and second lagoon cells will have dike-mounted diffused aeration systems (3 per cell). These devices use compressed air produced by 4.0 horsepower blowers to distribute air into the water column through submerged diffusers. In addition, the first and second lagoon cells will be dredged to remove the accumulated sludge and deepened to allow for greater retention time. The total depth of these cells will be 10 feet and 8 feet respectively after completion of the project. Floating curtain baffles will be added to mitigate the potential for short-circuiting of wastewater through the cells.

The influent feed line to the final cell will be diverted to the northeast corner. Floating curtain baffles will be added to create a circuitous flow pattern to the southeast portion of the final lagoon cell where the effluent lift station pumps are located. These pumps are vertical turbine pumps and will transfer the treated effluent to either the existing land application site (Sprayfield Site No. 1) or the proposed land application site (Sprayfield Site No. 2).

Other proposed improvements at the wastewater treatment system include a mechanical screen at the front of the system and an ultraviolet disinfection system at the effluent end of the system. The final lagoon cell has a surface area of 8.0 acres and a volume of 9.9 million gallons and will provide additional treatment along with providing storage for the land application system during rain events or other occurrences when effluent cannot be applied to the existing sprayfield (Site No. 1) or the proposed sprayfield (Site No. 2).

The existing land application site (Sprayfield Site No. 1) is presently hydraulically overloaded and effluent is ponding on the site. An assessment of the existing land application site is not included in this report and soil testing of that site has not been performed. Sprayfield site no. 1 should be evaluated to determine the actual capacity of the site based on the parameters described in this report. For the purposes of this report, it is assumed that the existing land application system will be able to assimilate the portion of applied wastewater to be determined once the new sprayfield site (No. 2) is in operation. A water balance based on this assumption is included as Attachment "B".

The wastewater system serves approximately 900 residents and two large water use customers; Harvest Select and a State of Alabama Correction Services prison. The treated effluent is measured prior to land application and has averaged roughly 0.47 million gallons per day. The approximate dimensions, volumes, and retention time (after improvements) are provided in Table 1.

Lagoon Cell	Depth (inches)	Area (acres)	Volume (gallons)	Retention Time (days)*
Primary Cell	120	2.42	6,542,000	13.9
Second Cell	96	2.42	5,044,000	10.7
Third Cell	48	7.95	9,888,755	21.0

* HRT at average flow of 470,000 gallons per day
** Depth of third cell will vary from approximately 36"- 60"

Table 1: Lagoon Dimensions

3.0 GEOLOGICAL AND SOIL INFORMATION

The proposed spray field areas are located along gently sloping topography. The majority of the wetted spray field area will fall within a slope of 0 to 5 percent. The proposed Sprayfield 2 is split into two (2) distinct areas, separated by a major drainage way which traverses the property from north to south. A minor swale dissects the larger spray field area. The proposed design includes a berm around the perimeter of the wetted area.

The site location is underlain by the Cretaceous aged Demopolis Chalk. The Demopolis Chalk is composed of chalk, marl and clay. According to the Bulletin 68 Part A, Geology and Ground-Water Resources of Montgomery County, Alabama published in 1963, the Demopolis Chalk is estimated to be approximately 420 feet thick.

The most significant concern with land application sites is karst topography in which solution channels provide direct surface connection to ground water. This is characteristic in areas of limestone formations. The subject site should not pose a risk to direct ground water contamination as there is no limestone evident or observed sinkhole activity in the area.

3.01 SOIL INVESTIGATION

The preliminary site layout showing topography and the relevant Soil Survey map are included in the appendix as figures 1 and 2, respectively. The site is gently rolling with the eastern half sloping to the west and the western half sloping to the east and south. An intermittent stream transects the property from north to south near the center of the property and another perennial stream crosses in the southwest corner of the property. The drainage features will not be a part of the wetted spray fields, and a minimum of 25 feet of buffer will be maintained from ephemeral draws and 100 feet on streams.

The soils in the disposal area are classified as Demopolis, Kipling, Okolona, and Sucarnoochee according to the Soil Conservation Service Soil Survey of Perry County, Alabama. A field run soil map of the property indicated the soils to be similar to the Demopolis and the Okolona soil series.

The larger proposed spray field (the western half of the property) is located primarily in the Okolona series. The Okolona series consists of deep, well drained very slowly permeable soils in uplands of the Blackland Prairie Major Land Resource Area. These are nearly level to gently sloping soils that formed in calcareous clayey material that is

underlain by marly clay and chalk. These soils have very high shrink-swell potential. Slopes range from 0 to 5 percent.

The spray field on the eastern half of the property is located in the Demopolis and Okolona series. The Demopolis soil series consists of shallow, well drained, very slowly permeable soils that formed in materials weathered from chalk and soft limestone. They are on ridgetops and side slopes in uplands of the Alabama, Mississippi, and Arkansas Blackland Prairie MLRA. The average annual air temperature is about 64 degrees F. and the average annual precipitation is about 58 inches. Slopes range from 1 to 35 percent.

Three Shelby tubes were collected and tested according to ASTM D5084 Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter – Method C Falling Head and Rising Tailwater. One test was given in each soil map unit for each spray field. The location and results of these tests are provided in the appendix.

Twenty five hand auger borings were advanced on the site to confirm the soil survey classification. The hand auger borings indicated soil characteristics consistent with the soil mapping. Soil data log and a Low Intensity Soils Map are provided in the appendix.

See Section 5.05 for discussion of groundwater elevations.

PHASE II: Uniontown WWTP Site 2: Slow Rate Land Application

4.0 PRE-APPLICATION TREATMENT

The ADEM guidelines require a minimum level of secondary treatment and appropriate disinfection for Restricted Access sites. There is some historical data for the influent wastewater stream; however, system improvements related to inflow and infiltration reduction should reduce the volume of waste flow and potentially increase the organic concentration levels. Therefore, the influent characteristics and loadings provided below are more consistent with typical domestic waste load concentrations. In addition, the improvements currently underway at the treatment facility should provide better treatment performance than the recent historical data indicates. Anticipated values for influent and effluent wastewater characteristics are provided in Table 2.

FLOW CHARACTERISTIC	INFLUENT	EFFLUENT**
Average Daily Flow (MGD)	0.5	0.5
5 Day Biochemical Oxygen Demand (mg/l)	200 est.	<45
Total Suspended Solids (mg/l)	200 est.	<90
Ammonia Nitrogen (mg/l)	25 est.	<10
Total Kjeldahl Nitrogen (mg/l)	40 est.	<20
Nitrate (mg/l)	0	<7.5
Nitrite (mg/l)	0	<1
Total Nitrogen (mg/l)	40 est.	<25
Total Phosphorous (mg/l)	8 - 10 est.	6 to 10
Chloride (mg/l)	<75	<40
Chloride (meq/l)	<75	1.09
Sodium Adsorption Ratio (meq/L)	N/A	3.4
Electrical Conductivity (mho/cm)	N/A	0.665
Metals/Priority Pollutants*	N/A	N/A

** This system will not receive any industrial wastewater or process water; therefore this information is not applicable.*

*** Monthly Average*

Table 2: Wastewater Characteristics

A sample of the effluent from the wastewater treatment lagoon was collected and analyzed for ICP metals (calcium, magnesium and sodium), chloride, specific conductance and sodium adsorption ratio (SAR). The inorganic constituents in the treated wastewater appear to be compatible with the site soils and crop cover. The tested parameters were within the acceptable range of values as indicated in Table 16.2: *Recommended Values for Inorganic Constituents in Wastewater Surfaced Applied to Land* in the State of Tennessee Design Guidelines for Wastewater Treatment Systems Using Spray Irrigation. The state of Tennessee values are used as a reference for design which are consistent with other states and applicable to the soils in Alabama.

4.01 WASTEWATER LOADING RATE

Wastewater loading rate calculations and nitrogen balance calculations indicate that the maximum loading rate is approximately 1.4 inches per week. Experience with several successfully operating land application spray fields in north and central Alabama indicate that 1.3 inches per week is a conservative loading rate and considered within the standards of slow rate land application. The proposed instantaneous wastewater loading rate is 0.08 to 0.13 inches per hour. This instantaneous loading rate will allow one inch of effluent to be applied to the field in four to seven hours. The hydraulic loading rate summary sheet and nitrogen balance calculations are provided in Attachment "A".

Water balance calculations for hydraulic loading rates based on soil permeability were made using the value of 0.2 inches/hour saturated vertical hydraulic conductivity. This value was the most restrictive of the three measurements made using ASTM D5084 Test Method for Measurement of Hydraulic Conductivity test. The permeability tests were performed in each soils series and averaged 0.163, 0.395, and 0.156 inches per hour. The EPA Guidelines recommend that the value of permeability be modified using a range of 4 to 10 percent of the measured value. In determining the water balance for this site a conservative design infiltration rate of 5 percent of the measured value was used.

Hydraulic loading rates based on nitrogen limits were made using an estimated annual nitrogen uptake of 200 pounds per acre per year. This value applies to forage crops such as Tall Fescue or Kentucky bluegrass. Nitrogen, especially in the nitrate form (NO_3) is considered to be one of the most limiting constituents of municipal wastewater with respect to land treatment systems.

An excessive concentration of phosphorous in the ground water is not anticipated to be a problem. The main mechanisms for removal of phosphorous in percolating water are sorption, chemical precipitation and crop uptake. Experience with numerous slow rate land treatment systems indicate that total phosphorous in the percolate should be less than 0.1 mg/l.

4.02 WETTED FIELD AREA AND REQUIRED STORAGE VOLUME

The wetted field area is approximately 26.5 acres which takes into account the property and drainage setbacks. The total area of the property is approximately 49 acres. Based on the preliminary wastewater loading rate of 1.3 inches per week, the anticipated capacity of this site is roughly 133,272 gallons per day on a daily average. The balance of the treated effluent will continue to be applied to the original spray field (Sprayfield Site No. 1). The proposed wetted spray field area is indicated on the Sentell Engineering construction documents titled Waste Water Treatment Plant Sprayfield City of Uniontown dated May 2012.

Based on the water balance, the total storage required for this system is 0 days of average daily flow. Allowing two days of storage for weekend non-use and five days of non-use for cases of equipment failure or excessive precipitation brings the total required storage volume to seven days. ADEM guidelines require 15 days of storage volume. The third cell of the lagoon has an approximate volume of 9.9 million gallons with an active volume of roughly 3.8 million gallons which occurs over an operating range of 1.5 feet. With an average design flow of 0.47 million gallons day (MGD), there is over 8 days of storage capacity.

The normal water elevation in the third lagoon cell is at elevation 210. Under extreme conditions, the lagoon water level can increase to elevation 213 which would raise the water elevation in all 3 lagoon cells. With a total combined surface area of 12.8 acres, the storage volume would be over 15 days at the design flow and would still have adequate freeboard (top of lagoon dikes is elevation 215).

The pond will have adequate volume for the proposed land application system and will continue to function as a polishing cell for the treatment system.

4.03 PROCESS DESIGN FOR THE SYSTEM

Raw wastewater is pumped into the treatment plant from the collection system. The wastewater receives biological treatment using a proposed modified and improved three cell lagoon system. The lagoon effluent is disinfected via UV radiation and flows by gravity to the existing effluent/irrigation lift station wet well. From the wet well, effluent is pumped by an existing 75 horsepower vertical turbine pump to the proposed spray field. There is a magnetic flow meter on the discharge from the irrigation pump. This meter will measure the total volume of irrigation water applied in a day. This information will be recorded along with the position of the hand operated splitter valve

which controls the direction of the flow to the land application sites (either Sprayfield Site 1 or proposed Sprayfield Site 2).

The wetted field will be divided into two separate spray zones. The header line for each field will have a manually operated isolation valve. Zone 1 calls for three main header lines with a total of 44 sprinkler heads. Zone 2 calls for two main header lines with a total of 20 sprinkler heads. Each header will have an isolation valve and each two inch lateral will have a ball valve which will allow isolation of individual sprinkler heads for service.

The company responsible for operating the system, EOS Utility Services, LLC will monitor and the record the usage of each sprayfield and rotate the sprayfields to keep the application rate of the proposed Sprayfield Site 2 within design parameters. Each sprayfield will be allowed "rest" days to allow for proper percolation and re-aeration of the soils.

The system controls will require a manual start to initiate spraying to any field. The meter will give instantaneous flow rates and will also accumulate flow data (gallons) during a spray event. The valve that directs the flow to the sprayfield is also manually operated. The operator will first set the position of the splitter valve, which is located at the intersection of County Highway 53 and County Highway 65 (near connection to the Linden water system), to the desired sprayfield and then turn the irrigation pump on at the WWTP site. The operator will monitor the flow readings on the existing flowmeter to measure the total flow delivered to the site. Before the maximum daily design application rate has been reached the pump will be manually shut down at the site until the next day.

The proposed irrigation system is to be a solid set irrigation system. The mains and laterals will be buried at a depth of approximately 12 to 18 inches. Risers will extend approximately three feet above grade, and will be connected to the laterals by a flexible hose. Automatic drains will be installed in the low points of the mains to allow water to drain out of the risers in the winter months when there is a possibility of freezing.

EOS Utility Services, LLC will identify specific points in each zone to monitor on a weekly basis. These locations are shown on the Preliminary Site Layout. These locations will be checked at the end of the irrigation cycle for each zone to verify that no runoff is occurring. Also, during the initial two weeks of operation, adjustments will be made in the spray heads, as may be necessary to customize the loading to these critical areas.

There will be no areas of the proposed wetted field that have slopes exceeding 15%. The wetted field on the Preliminary Site Layout has been drawn in areas sloping 4 to 12%.

5.0 ENGINEERING REQUIREMENTS

Section IV of the ADEM Guidelines identifies items 5.01 through 5.19 which are addressed in this Phase II report.

5.01 PRE-TREATMENT SYSTEM

Raw wastewater from in and around the City of Uniontown is pumped into the wastewater treatment facility from the collection system. The existing plant has a design capacity of 525,000 gallons per day. The proposed spray field will be used along with the existing spray field (Site No. 1). By alternating the use of the spray fields, each field will have time to rest and allow the soils to re-aerate and dry.

The wastewater will undergo biological treatment and settling in the wastewater lagoon system, followed by disinfection prior to discharge by gravity flow to the polishing lagoon cell. As previously discussed, the first two lagoon cells will be dredged. The depth of the first cell will be increased by five (5) feet and the depth of the second cell will be increased by three (3) feet for a total increase in depth of 8 feet. These modifications will increase the volume in the first lagoon cell from 3.8 million gallons to 6.5 million gallons and in the second lagoon cell from 3.8 million gallons to 5.0 million gallons for a total increase in volume of 3.9 million gallons. Also, floating curtain baffles and supplemental aeration/mixing will be utilized to provide more efficient use of the lagoon cell volume. The influent line to the third lagoon cell will be relocated and curtain baffles will be added in order to mitigate the potential of short-circuiting. Ultraviolet disinfection units will be added for pathogen reduction prior to land application.

The retention times and dimensional data is provided in Table 1.

5.02 GROUNDWATER PROTECTION

The entire treatment system is designed to maintain groundwater at or below the maximum contaminant levels specified under P.L. 92-532 (The Safe Drinking Water Act). Nitrate is normally the limiting factor for the application rate during part of the year, however with the treatment process in place (and future expansions), total nitrogen will be less than 15 mg/l so that nitrate concentrations in the groundwater will not be the limiting factor.

Generally adequate physical filtration and biological treatment of the applied treated wastewater occur in the uppermost two to four feet of soil. The test pits excavated at

the site show soil depths greater than four feet. The soil borings drilled at the site encountered weathered chalk at approximately 3 to 6 feet below ground surface. The split spoon sampler could not penetrate deeper than approximately 16 feet below ground surface which is the depth that the wells were set. Each of the wells were completed with a ten foot screen. The boring logs are presented as a part of the Attachments as provided by Cox Environmental and HydroGeologic, LLC.

A groundwater well survey was conducted for an area encompassing a one mile radius from the wastewater treatment facility boundary. Several sources of information were used to identify well sites including; tax maps and records retrieved from the Tuscaloosa County Courthouse; the United States Geological Survey (USGS) water resources Ground-water Site Inventory for Alabama; ADEM records; conversations with the local potable water provider (City of Uniontown); conversations with adjacent property owners; and site reconnaissance.

The USGS ground water well database documents 7 sites in Perry County and 63 sites in Marengo County. There were no wells located within the area of interest. The closest well is identified as Station 322449087355 70 well which is approximately 4.0 miles due west, in Marengo County. These sites are mapped in Figure 1 and Figure 2 below:

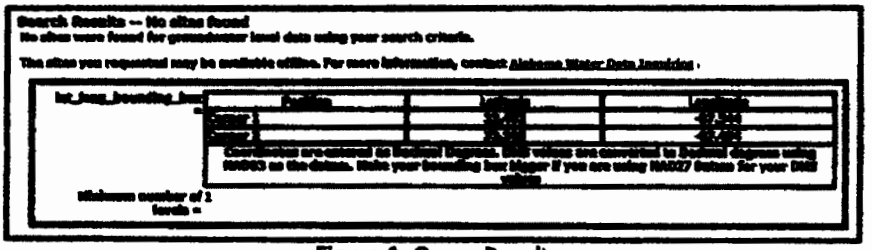

Figure 1: Query Results

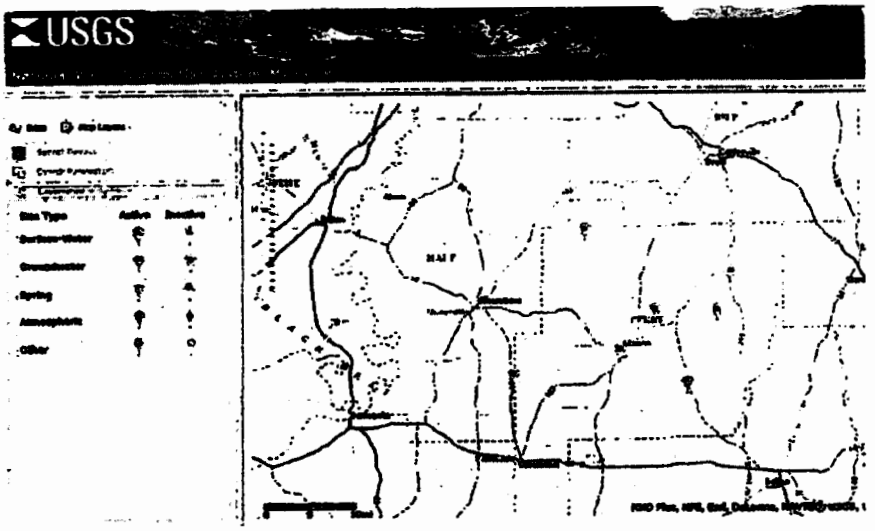

Figure 2: Perry County Wells in USGS Database

Potable water for the area is provided by either the City of Uniontown or the Linden Water system, which is a wholesale buyer from the Uniontown water system. The connection point between the systems is at the intersection of County Road 53 and County Road 65. The source of water for Uniontown is groundwater. There are two (2) wells and two (2) water storage tanks which are both located within the city limits, both over three (3) miles to the north of the proposed Sprayfield Site No. 2.

The wells immediately adjacent to the site are indicated in Figure 3. Several neighbors were interviewed in order to determine well use and depth. Neighbors indicated that wells at 4511 and 4521 are connected to the water system. There are other wells within the half mile radius that are using well water for drinking water. However, we believe that these wells are greater than 80 feet in depth and separated from the land application site by tight clay and chalk layers. Further, the homes on wells in this area have access to the existing water system should any contamination become evident in the monitoring wells. Six (6) monitoring wells have been installed with this system which will adequately monitor the quality of water infiltrating the ground at the site.

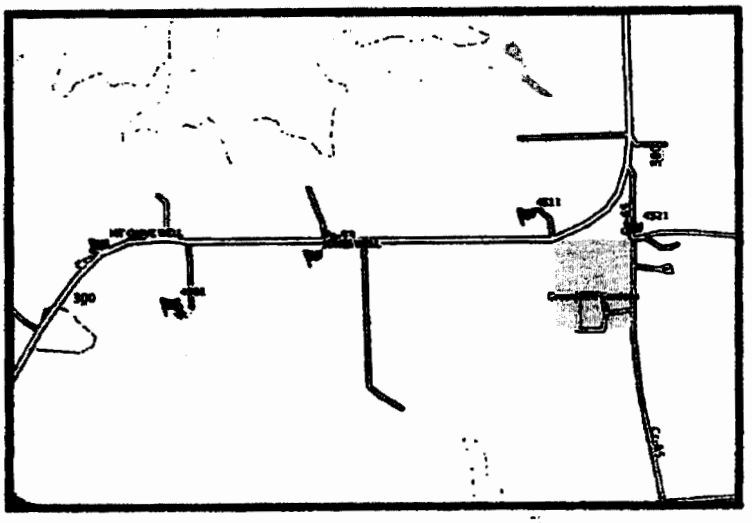

Figure 3: Well Sites

A more complete map of the wells in the area and the approximate location of the existing water distribution system is provided as Attachment "G".

5.03 SPRAY FIELD AREA

Water balance calculations are provided in the Appendix. The soils at the spray field site are slowly permeable based on three (3) hydraulic conductivity tests performed on soil samples collected in Shelby tubes from borings taken at the site (results presented in the Attachment). One sample was collected from each soil series in the area of the wetted spray area. Water balance calculations for hydraulic loading rates based on soil permeability were made using the value of 0.2 inches/hour saturated vertical hydraulic conductivity. This value was the most restrictive of the three measurements made using ASTM D5084 Test Method for Measurement of Hydraulic Conductivity test. The permeability tests were performed in each soils series and averaged 0.163, 0.395, and 0.156 inches per hour.

Wastewater loading rate calculations and nitrogen balance calculations indicate that the maximum loading rate is approximately 1.4 inches per week. Experience with several successfully operating land application spray fields in north and central Alabama indicate that 1.3 inches per week is a conservative loading rate. The proposed instantaneous wastewater loading rate is 0.08 to 0.13 inches per hour. This instantaneous loading rate will allow one inch of effluent to be applied to the field in four to seven hours.

The spray field size was determined based on a loading rate of 1.3 inches per week, which is lower than the calculated hydraulic loading rate in all months. The total annual loading rate based on this methodology is 68 inches per year.

The maximum wastewater loading rate based on nitrogen loading is 7.63 inches per year. The parameters for nitrogen loading are more fully described in Part 5.08 below.

The theoretical maximum capacity of Sprayfield No. 2 is determined as follows:

Proposed application rate is 1.3 inches/week x (1 week/7 days) x (1 foot/12 inches) = 0.01548 feet per day

Wetted sprayfield area is 26.5 acres x (43,560 ft^2 / 1 acre) = 1,154,340 ft^2 of effluent application area

1,154,340 ft^2 x 0.01548 ft per day = 17,864.8 ft^3 per day x (7.48 gallons/1 ft^3) = 133,638 gallons per day

Sprayfield No.2 Proposed Capacity = 133,638 gallons per day

Past experience with other spray irrigation systems in central Alabama indicates that up to 10% of the spray field may need to be eliminated after construction because of small areas of poor soil. The design of the spray system will allow for individual spray heads to be turned off and removed.

5.04 BACKGROUND DATA

Background data on the soil on the site was provided in the Phase I part of this report and the report attachments. Background data on the groundwater is currently being collected from the monitoring wells recently installed.

5.05 GROUNDWATER

The depth to groundwater encountered at the site ranged from 7.07 feet below ground surface (MW-1) to 13.95 feet below ground surface (MW-2) as measured on August 20, 2013. All of the monitoring wells recharge very slowly due to the silty clay residuum and weathered chalk that they are screened in. An underdrain system is not planned for this system.

5.06 RAINWATER DIVERSION

This site is located near the top of a drainage basin, and rainwater running onto the site from property to the north is routed through two 48" diameter drainage pipes crossing County Road 53 that directs flow through the drainage way that divides the spray field into two areas. The proposed design includes a berm that will divert any storm water run-off from off-site around the wetted spray field area.

5.07 SLOPE

The spray field site has slopes generally between 4% and 12%. The wetted field will not have a slope greater than 30%.

5.08 CROP COVER

The site is predominantly pasture land covered with native grass species. The land has been cut for hay in the past and the trees that were left on site have been recently cleared in anticipation of the spray field installation. The plant uptake and storage of nitrogen was based on an estimated annual nitrogen uptake of 200 pounds per acre per year (225 kg/ha*year). This value applies to forage crops such as Tall Fescue or Kentucky bluegrass.

The use of 225 kg/ha*year for nitrogen uptake for forage crops is from the EPA guidelines.

5.09 SATURATED SOILS

This system will be operated so that the soils will remain aerobic. Experience has shown that this type of soil will not become saturated if the fields are sprayed two to three times a week and allowed to rest for at least two days after applications or heavy rains.

5.10 PUBLIC ACCESS

This site will be a restricted access site. The proposed spray field will have a 4-strand barbed wire fence around the perimeter. No public access will be allowed.

5.11 STORAGE CAPACITY

A storage volume calculation has been performed for the proposed system to determine the required volume of storage for the system. Allowing two days of storage for weekend non-use and five days of non-use for cases of equipment failure or excessive precipitation brings the total required storage volume to seven days. ADEM guidelines require 15 days of storage volume. The existing third cell of the lagoon system along with the additional freeboard in the first and second lagoon cells provides adequate volume for any spray field down times due to rain events or equipment/material failures.

5.12 LOCATION - ODORS

This site is located approximately 1.5 miles outside of the City limits in a sparsely populated area. The spray field is a restricted site and the public will be prevented from

accessing the site by fences and warning signs. The wetted spray area will be setback a minimum of 100 feet from the property line. With a properly operated treatment and land application system, the odor potential should be minimized.

5.13 MONITORING WELLS

A total of six ground water monitoring wells have been installed at this site. Each of the wells was screened in the saturated zone with a total depth of approximately 16 feet below ground surface. Monitoring wells MW-1, MW-2 and MW-4 are considered upgradient of the spray fields, while the remaining wells (MW-3, MW-5, and MW-6) are considered down gradient of the spray fields. The monitoring well locations were approved by Mr. Witt Slagel (ADEM Groundwater Branch) prior to installation during a site visit on August 16, 2013. A ground water monitoring plan will be developed for this site.

5.14 OPERATION AND MAINTENANCE MANUAL

An Operation and Maintenance manual will be provided for this system.

5.15 METALS MIGRATION

Only domestic wastewater will be treated on this site. With domestic wastewater, metals are generally not considered a problem. Lysimeters are not recommended for this site.

5.16 IRRIGATION SYSTEM

The proposed irrigation system is to be a solid set irrigation system. The mains and laterals will be buried at a depth of approximately 12 to 18 inches. Risers will extend approximately six feet above grade, and will be galvanized steel pipe supported by 1.5" galvanized steel pipe sections which will set in concrete to a depth on 3 feet. The risers will be attached to the steel pipe restraints with stainless steel gear clamps. Each riser will have a ball valve which will allow isolation of the sprinkler from the rest of the pressurized system. There are a total of 65 irrigation sprinkler heads proposed for the new spray field.

5.17 IRRIGATION CONTROLS

Two vertical turbine pumps will be used to pressurize the irrigation system, one duty pump, and one standby pump. There is a magnetic flow meter on the discharge from the irrigation pump. This meter will measure the total volume of irrigation water applied in a day. This information will be recorded along with the position of the hand operated

splitter valve which controls the direction of the flow to the land application sites (either Sprayfield Site 1 or proposed Sprayfield Site 2).

5.18 SPRINKLERS

Full circle Rainbird 80E impact sprinkler heads will be used. These heads are manufactured for use with land application systems and have performed well on other land application systems.

5.19 SPRAY FIELD DISTRIBUTION

Spray field laterals will be PVC and will be sized to equalize pressures through the spray field. The design pressure is 50 psi, with a 10% allowance for any sprinkler head.

SUMMARY

This site has been investigated for use as a slow rate land treatment site. The site contains the required characteristics for successful treatment and disposal of 0.133 million gallons per day of domestic wastewater collected and treated at the existing Uniontown wastewater treatment system. The proposed system will work in conjunction with the existing sprayfield site (Sprayfield No. 1) and will help alleviate the overloaded condition that exists there. A detailed review and assessment of the existing sprayfield site is recommended in order to determine if the total land application capacity is adequate to serve the disposal needs of the Uniontown WWTP. The design and permitted capacity of the Uniontown WWTP is 0.525 million gallons per day.

6.0 ATTACHMENTS

ATTACHMENT "A"
Figure 1: Preliminary Site Layout
Figure 2: SCS Soil Survey Map
Figure 3: USGS 7.5 Minute Series Quadrangle Map

ATTACHMENT "B"
Water Balance Calculations
Nitrogen Balance Calculations
Storage Volume Calculations

ATTACHMENT "C"
Low Intensity Soils Map
Soil Boring Data Log

ATTACHMENT "D"
Hydraulic Conductivity Tests (provided by Building and Earth Sciences)

ATTACHMENT "E"
Soil Analytical Lab Data (provided by LRS, Inc.)

ATTACHMENT "F"
Lagoon Effluent Water Quality Analysis (provided by TTL)

ATTACHMENT "G"
Ground Water Well Location Map

ATTACHMENT "H"
Phase 1 Hydrogeological Evaluation